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APPRENTICESHIP TRAINING

CABINETMAKER Program

Alberta
MANPOWER
Apprenticeship and Trade Certification

DDN 5791693

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CABINETMAKER TRADE

THE GOAL OF APPRENTICESHIP TRAINING

CABINETMAKER

To develop a competent tradesman who, through skill and knowledge, is capable of performing in all facets of the craft.

PRODUCTION CABINETMAKER

To develop a competent tradesman who, through skills and knowledge, is capable of performing specific duties related to production woodworking.

THE PRODUCT OF APPRENTICESHIP — a graduate who is able to:

CABINETMAKER

- ★ know the characteristics of wood, wood products or substitutes used in industrial woodworking.
- ★ be proficient with safe use of hand tools and powered machines and equipment used in industrial woodworking.
- ★ read and interpret plans and specifications and prepare layouts, working drawings and cutting lists.
- ★ calculate material quantities.
- ★ detail components and fixtures according to specifications and assume responsibility for the end product.
- ★ relate to job situations and other trades that precede or follow.
- ★ perform assigned tasks in accordance with quality and production standards required in industry.

PRODUCTION CABINETMAKER

- ★ know the characteristics of wood, wood products or substitutes used in industrial woodworking.
- ★ know the characteristics of glues and adhesives and their accepted usage in industry.
- ★ use hand tools and powered equipment in a proper and safe manner.
- ★ know techniques for assembly and installation of hardware and other components.
- ★ perform assigned tasks in accordance with quality and production standards required in industry.

CABINETMAKER
APPRENTICESHIP INFORMATION

Basic Requirements:

★ Indenture for four periods of Trade experience in the Cabinetmaker trade and two periods of Trade experience in the Production Cabinetmaker trade.

★ Attend an 8 week technical training course in each period.

★ Fulfill the requirements for each period including 1600 hours of work experience exclusive of time spent at the training course; successfully complete the technical training course and obtain a satisfactory employer's report.

★ Education — a minimum requirement is the completion of grade 9 or a pass on an equivalent entrance examination as prescribed by the Trade regulations.

★ Age — the minimum age for apprentices is 16 years. There is no upper age limit.

Credits:

★ Accelerated patterns of apprenticeship may be granted for related technical training and/or experience.

Benefits:

★ Apprenticeship is a learning-while-earning program. During the apprenticeship period, while working at the trade, apprentices are assured by regulation of a minimum percentage of the prevailing journeyman rate: 55% during the first period, 65% during the second period, 75% during the third period, 85% during the fourth period in the Cabinetmaker trade and 65% during the first period, 75% during the second period in the Production Cabinetmaker trade. Progress from one rate to the next takes place only after successful completion of all the requirements for each period.

★ All apprentices 17 years of age and older are normally eligible for training allowances while attending technical training courses. These allowances are funded by the Canada Employment and Immigration Commission.

★ Administrative procedures establishing the amount of training allowance is complex and can vary with an individual's circumstances. Contact a local Canada Employment Centre for details.

★ An apprentice who successfully completes the program will graduate with an Alberta Completion of Apprenticeship Certificate and a Certificate of Qualification.

★ The most significant benefit to the graduate apprentice is that he is well trained in technical and practical aspects of the trade and is able to make a worthwhile and productive contribution to society. Society in return, will provide an opportunity for livelihood.

DIRECTIONS FOR PROSPECTIVE APPRENTICES

★ Contact your nearest Apprenticeship and Trade Certification office for detailed information and counselling (see list of offices on page 41).

★ Obtain an application form from the Apprenticeship and Trade Certification office and neatly complete, in full, the information requested of the apprentice.

★ Persevere in the search for apprentice employment and upon obtaining employment, give the application to the employer. It should be completed and returned to an Apprenticeship and Trade Certification office forthwith.

★ Attach to the apprentice application a copy (transcript) of the marks for your last year of school. Applicants who do not have their school transcripts or a grade 9 standing are required to write an entrance examination. If transcripts have been lost, contact Alberta Education for information on school transcripts.

★ Any time credit for previous experience in the Cabinetmaker trade should be discussed with the employer and requested on the application forms by the employer.

★ A contract of apprenticeship is entered into between the apprentice and the employer and should be signed within 90 days after the apprentice application has been approved. If contracts have not been issued within this time, contact the Apprenticeship and Trade Certification office.

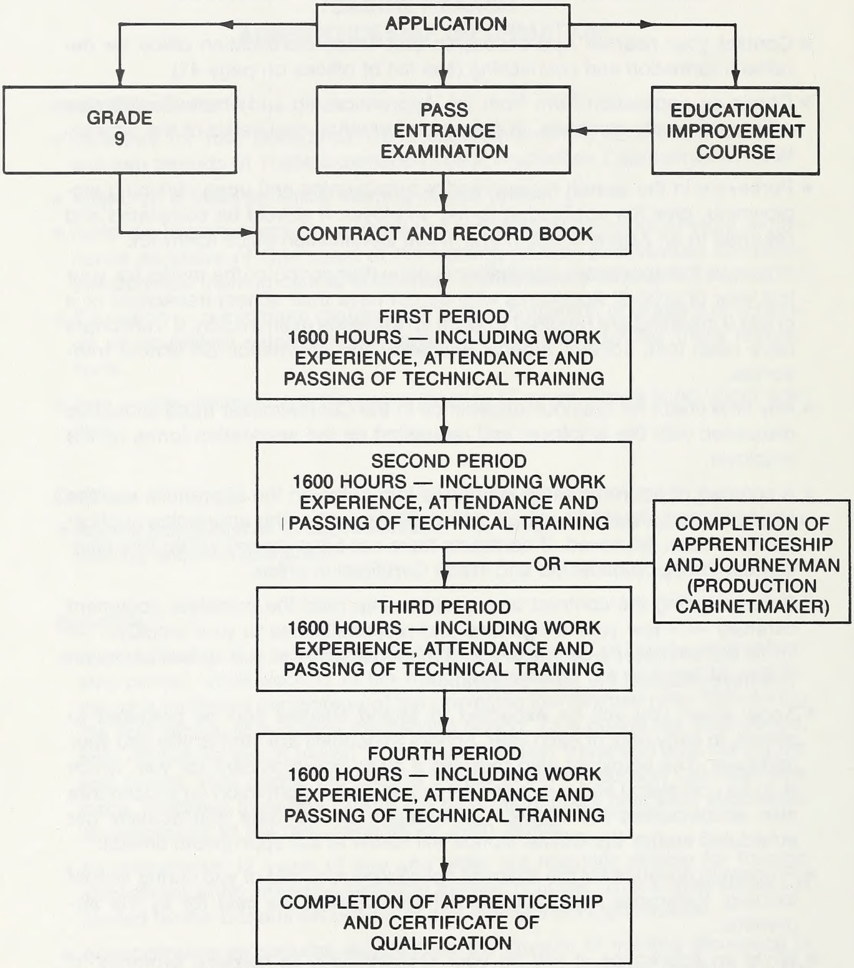
★ Before signing the contract of apprenticeship read the complete document carefully — know your obligations and responsibilities to your employer — know the employer's obligations and responsibilities to you — feel confident you have selected the right occupation.

★ Know when you will be expected to attend classes and be prepared to attend. In early May of each year, School Schedules are sent to you and your employer. The employer also receives a class selection card for you, which is to be completed and submitted for scheduling. Information on procedures also accompanies the above. Confirmation on the date you actually get scheduled and/or the Official Notice will follow at the appropriate time(s).

★ Prepare in advance for the financial obligations required of you during school training. Reference materials and school supplies are paid for by the apprentice.

★ While an apprentice, it will be your responsibility to respond promptly to mailed directions and requests from Apprenticeship and Trade Certification.

APPRENTICESHIP ROUTE TOWARD CERTIFICATION


APPLICATION
GRADE 9
PASS ENTRANCE EXAMINATION
EDUCATIONAL IMPROVEMENT COURSE
CONTRACT AND RECORD BOOK
FIRST PERIOD 1600 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
SECOND PERIOD 1600 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
OR
COMPLETION OF APPRENTICESHIP AND JOURNEYMAN (PRODUCTION CABINETMAKER)
THIRD PERIOD 1600 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
FOURTH PERIOD 1600 HOURS — INCLUDING WORK EXPERIENCE, ATTENDANCE AND PASSING OF TECHNICAL TRAINING
COMPLETION OF APPRENTICESHIP AND CERTIFICATE OF QUALIFICATION

The term of apprenticeship shall be four periods of 12 months each in the Cabinetmaker trade and two periods of 12 months each in the Production Cabinetmaker trade.

APPRENTICESHIP COMMITTEE STRUCTURE

Cabinetmaker Provincial Apprenticeship Committee

The Provincial Apprenticeship Committee for the Cabinetmaker Trade is comprised of members from Local Apprenticeship Committees from the cities of Edmonton and Calgary.

This Committee is concerned with the policies that guide the program and make recommendations to the Apprenticeship and Trade Certification Board and the Executive Director of Apprenticeship and Trade Certification in the following areas:

- ★ Contribute current information relative to changes in the trade and requirements of industry.
- ★ Make recommendations for changes to existing trade regulations.
- ★ Assist in updating of the training program through recommendations for revisions to the course outline and attendant examinations.

Cabinetmaker Local Apprenticeship Committee

Local Apprenticeship Committees are concerned with individuals and trade situations within a local region. Meetings are held throughout the year to make recommendations and to discuss problems relating to the apprenticeship program. Members who serve on committees are nominated by employer and labour organizations, and membership is equally divided into employer and employee representation in accordance with The Manpower Development Act.

Apprenticeship Committee Members 1985:

Mr. Helmut Baumert — Edmonton L.A.C. — Employer
Mr. William Burton — Edmonton L.A.C. — Employer
Mrs. Brenda Hahn — Edmonton L.A.C. — Employee
Mr. John Krankowski — Edmonton L.A.C. — Employee
Mr. Paul Neyka — Edmonton L.A.C. — Employer (Alternate)
Mr. Arno Rothe — Calgary L.A.C. — Employer
Mr. Manfred Roestel — Calgary L.A.C. — Employer
Mr. Guenther Egger — Calgary L.A.C. — Employee
Mr. Otto Doll — Calgary L.A.C. — Employee
Mr. Peter Hauserman — Calgary L.A.C. — Employer (Alternate)
Mr. Hans Huth — Calgary L.A.C. — Employee (Alternate)

CABINETMAKER TRADE COURSE OUTLINE

This outline has been prepared in accordance with recommendations from the Provincial Apprenticeship Committee for the Cabinetmaker Trade in the Province of Alberta.

The outline was updated following consideration given to recommendations and suggestions from:

Local Apprenticeship Committees
Representatives from training institutes
Curriculum Sub-Committee from the Provincial Apprenticeship Committee

PROCEDURES FOR RECOMMENDING REVISION(S) TO THE COURSE OUTLINE

Any concerned citizen or group in the Province of Alberta may make recommendations for change by writing to Apprenticeship and Trade Certification, Edmonton.

It is requested that recommendations for change refer to specific areas and state references used. Recommendations received will be placed before regular meetings of the Provincial Apprenticeship Committee.

PREFACE

The lectures, demonstrations and assignments outlined herein, are intended to familiarize and prepare the apprentice for the performance of his occupation within the Cabinetmaker trade. To cope with present day requirements and to become able to adjust to situations that will arise apart from nominal work experience during apprenticeship it is accepted that the apprentice should appreciate and develop skills within the scope of the trade.

★ Instruction in trade matters often lends to both shop and theory situations and this outline does not define precise divisions.

★ The emphasis or hours allocated for shop and related instruction is specified in the preface or objectives for each school term.

★ With respect to related subjects (blueprint-shop drawing; mathematics, etc.) it is accepted that knowledge of these areas is important for the tradesman. It is specified that all matters reflect the Cabinetmaker trade and that the depth of instruction relate to the needs of the journeyman.

International System of Unites (SI METRIC)

The requirements of industry to meet a need to construct products using the SI method of measurement require the preparation of apprentices to include SI knowledge. Technical training therefore will include theoretical and practical instruction to enable apprentices to perform adequately in this system.

Occupational Health and Safety Regulations

The relationship between these regulations and safety will be observed throughout the program.

SAFETY EDUCATION

Safe working procedures and conditions, accident prevention and the preservation of health is of primary importance in the Apprenticeship programs in Alberta. These responsibilities are shared and require the joint efforts of the government, employers, employees and the general public. Therefore, it is imperative that all parties become aware of circumstances that may lead to injury or harm and that safe learning experiences and environment can be created by controlling the variables and behaviors that may contribute to or cause an accident and/or an injury.

It is generally recognized that a safe attitude contributes to an accident free environment. As a result a healthy safe attitude towards accidents will benefit an employee by helping to avoid injury, loss of time and loss of pay.

A tradesman is possibly exposed to more hazards than any other person in the work force and therefore, should be familiar with the Occupational Health and Safety Act and Regulations dealing with his own personal safety and the special safety rules applying to each job.

LEGAL AND ADMINISTRATIVE ASPECTS

Employer's Responsibilities:

Accident prevention and the provisions of safe working conditions are the responsibilities of an employer. The company is responsible for:

1. The provision and maintenance of safety equipment
2. The provision of protective devices and clothing (as required by the Occupational Health & Safety Act, General Safety Regulations)
3. The enforcement of safe working procedures
4. Adequate safeguards for machinery, equipment and tools
5. Observance of all accident prevention regulations
6. Adequate training to allow a worker to use or operate equipment in an effective and safe manner.

Government's Responsibilities:

Apprenticeship and Trade Certification in conjunction with the respective Provincial Apprenticeship Committee assumes the responsibility to assure that adequate safety is reflected in the curriculum and that adequate safety instruction is presented at the training establishments.

The Occupational Health and Safety Inspection Branch assumes the responsibility for periodic inspection of the operation to ensure that regulations for industry are being correctly observed.

Individual's Responsibilities:

The employee is responsible for:

1. Knowing and working in accordance with the safety regulations pertaining to job environment and
2. Working in such a way as not to endanger himself or his fellow employees

The major factor in safety is the individual employee, his personal attitude toward safety and having an awareness of the respective safety regulation.

CABINETMAKER PROGRAM

Subjects and Time Distribution

First Period	**8 Weeks**	**30 Hours Per Week**	**240 Hours**
Section One:	Theory		60
Section Two:	Shop		124
Section Three:	Shop Drawing		32
Section Four:	Trade Mathematics		24
Second Period	**8 Weeks**	**30 Hours Per Week**	**240 Hours**
Section One:	Theory		56
Section Two:	Shop		120
Section Three:	Shop Drawing		40
Section Four:	Trade Mathematics		24
Third Period	**8 Weeks**	**30 Hours Per Week**	**240 Hours**
Section One:	Theory		56
Section Two:	Shop		120
Section Three:	Shop Drawing		40
Section Four:	Trade Mathematics		24
Fourth Period	**8 Weeks**	**30 Hours Per Week**	**240 Hours**
Section One:	Theory		56
Section Two:	Shop		120
Section Three:	Shop Drawing		40
Section Four:	Trade Mathematics		24

FIRST PERIOD TECHNICAL TRAINING

SECTION ONE: THEORY 60 Hours

A. Registration and Introductions 6 Hours

1. Requirements of training institute
   - (a) deportment and attendance
   - (b) reference books — study methods

2. Apprenticeship and Trade Certification Division
   - (a) liaison officer

3. The Cabinetmaker Trade
   - (a) history
   - (b) scope in todays industry
     - (i) Production Cabinetmaker
     - (ii) Cabinetmaker

B. Materials 19 Hours

1. Solid woods in common usage
   - (a) recognition and classifications
     - (i) hard woods (deciduous)
     - (ii) soft woods (conifers)
     - (iii) regions grown
     - (iv) relative commercial values
     - (v) methods of lumber production
   - (b) structure and growth properties of wood
     - (i) cell structure
     - (ii) densities, colors, odors
     - (iii) grains, workability
       - — structural qualities
       - — aesthetic qualities
     - (iv) bending qualities
     - (v) expansion and contraction consideration
   - (c) introduction to grading
     - (i) classification of lumber
     - (ii) standard dimensions — uses
     - (iii) special orders
     - (iv) flaws and defects related to growth and sawmills
       - — knots, burns, rot, wanes, etc.
   - (d) seasoning and storage
     - (i) moisture content
     - (ii) air drying
     - (iii) kiln drying
     - (iv) shrinkages
     - (v) flaws and defects related to improper storage and drying
       - — raised grains, rot, checks, warpage, etc.

2. Manufactured wood products
    (a) plywoods, fiber boards, particle boards, hard boards
        (i) methods of manufacture — classifications
        (ii) range of panel dimensions
            — special orders
        (iii) structural and aesthetic qualities
            — typical usage
        (iv) changes relating to humidity
    (b) prefinished boards and panels
        (i) vinyl and melamine overlays
    (c) surface veneers of various plywoods
        (i) sliced and rotary cuts
            — various grains effects achieved
        (ii) typical thickness
        (iii) cores
            — veneer
            — solid
            — particle boards
            — combinations

3. Wood moldings used in industry
    (a) solid wood types
        (i) crowned and cove types
    (b) typical usage
        (i) stops, beads, trim, etc.

4. Introduction to other materials
    (a) laminated plastics
        (i) methods of manufacture — classifications
            — special orders
        (ii) range of panel dimensions
            — typical usage
    (b) plastics in sheets, membranes and extruded moldings
        (i) range of dimensions
        (ii) typical usage
    (c) metals
        (i) extruded molds and trim
        (ii) structural components
            — types, sizes, composition
            — typical usage

5. Sandpapers
    (a) compositions and grits
    (b) selection for various operations

6. Common adhesives
    (a) animal, powdered casein, plastic resin, aliphatic resin, resorcinol, epoxy, urea resin, polyvinyl resin, cross linking polyvinyl resin and contact types

- (b) characteristics
    - (i) suitable temperature for applications
    - (ii) mixing (consistencies)
    - (iii) relative strengths
- (c) selections for various tasks
    - (i) lay-up times
    - (ii) minimizing staining
    - (iii) moisture and temperature considerations
- (d) introduction to hot melt systems
- (e) principles of adhesion

7. General and special purpose fasteners
    - (a) corrugated fasteners, brads, nails, etc.
        - (i) sizes, coatings
        - (ii) selections for various materials and tasks
          — spacing, predrilling, setting, etc.
    - (b) screws
        - (i) sizes, gauges, coatings
          — types of heads and shanks
        - (ii) selection for various materials and tasks
          — spacing, predrilling, countersink, plugs, etc.
    - (c) plates and brackets
        - (i) types and sizes
          — "T" mending, flat and bent corner, etc.
        - (ii) typical usage

C. Hand Tools 7 Hours

1. Recognition, scope of use and maintenance of tools
    - (a) measuring, layout, alignment and levelling tools
    - (b) squaring and making tools
    - (c) cutting tools
        - (i) edge
        - (ii) tooth
    - (d) boring and drilling tools
    - (e) securing and assembly tools
    - (f) prying and dismantling tools
    - (g) sharpening, honing and conditioning
        - (i) vises, clamps, saw sets
        - (ii) stones, files, lubricants, etc.

2. Various clamps used in industry
    - (a) "C" types, bar, speed, spring, band, etc.

D. Machines and Equipment 14 Hours

An introduction to basic woodworking machines and powered hand tools with emphasis on safe set-up and operation.

1. Power sources
    - (a) pneumatic
    - (b) electrical
        - (i) basic principles
        - (ii) line voltages, phases and cycles

        - (iii) disconnects and safe practices
        - (iv) principles of motors, starters and switches
        - (v) safety
            - — general
            - — regulations

2. Powered circular saws
    - (a) portable
    - (b) radial arm
    - (c) table
    - (d) panel
        - (i) scope of use with various types
        - (ii) blades
            - — types and typical usage
        - (iii) other attachments
            - — simple jigs, extensions
            - — cutter heads, dado sets, etc.

3. Band saw
    - (a) scope of use
    - (b) blade selection for various operations
        - (i) simple jigs

4. Reciprocating saws
    - (a) sabre and bayonet
    - (b) jig or scroll saw
        - (i) scope of use
        - (ii) blade selections

5. Powered edge cutting equipment
    - (a) scope of use with various machines
    - (b) review of knives, cutters, etc.
    - (c) thickness planer
    - (d) jointer
    - (e) hand routers
    - (f) electric planes
    - (g) lamello type machines

6. Boring and drilling equipment
    - (a) scope of use
    - (b) bits
        - (i) types and typical usage
    - (c) attachments
        - (i) simple jigs and templates
    - (d) drill press
    - (e) portable drills

7. Portable sanders
    - (a) scope of use with various sanders
    - (b) grit selection

        - (c) belt
        - (d) disk
        - (e) reciprocating

E. Joints For Fabrication **10 Hours**

1. Basic woodworking joints used in industry
    - (a) butt
    - (b) mitre
    - (c) lap
        - (i) cross, middle and end
    - (d) dado and groove
    - (e) rabbet
    - (f) single dowel
    - (g) tongue and groove
    - (h) groove and spline
    - (i) mortise and tenon
    - (j) dovetail

2. Comparisons for suitability of various types in specified projects and in industry

F. Accident Prevention **4 Hours**

1. Information given in the Occupational Health and Safety Regulations will be stressed as course material is taught. Regulations will be observed in shop practices.

2. Study of Regulations
    - (a) first aid regulations
        - (i) responsibilities of employers and personnel
    - (b) general accident precautions
        - (i) general safety precautions
            - — housekeeping, personal protective equipment, clothing, respiratory protective equipment
        - (ii) ventilation — general requirements
            - — spray painting room and booths, illumination
        - (iii) ladders
            - — vertical, portable, step
        - (iv) requirements for machinery and equipment
            - — guards, grinding woodwork — general, saws — general, hand-fed rip and crosscut table saws, swing and sliding cut-off saws, portable hand-operated circular saws
            - — hand-fed planers or jointers, tenoning machines, boring and mortising machines, wood shapers and panel raisers, routers, roll-type glue spreaders

3. Fire prevention and controls
    - (a) classification of fires
        - (i) types of extinguishers

- (b) critical areas
    - (i) finishing rooms
    - (ii) mechanical rooms
    - (iii) exhaust systems
    - (iv) solvent adhesives areas

4. Other concerns
    - (a) obtaining assistance for injured workmen
        - (i) procedures for obtaining first aid training and certification
    - (b) industrial health hazards
        - (i) fumes and skin contact with toxic substances
        - (ii) noise

SECTION TWO: SHOP 124 Hours

A. Hand Tools 26 Hours

1. Skill development
    - (a) selected exercises and projects that require use of hand tools of all types
        - (i) solid woods, plywoods and particle boards
        - (ii) making and fitting of joints

2. Reconditioning of hand tools
    - (a) tools that are used will be maintained in top condition by the apprentices

B. Fasteners and Adhesives 17 Hours

1. Selected exercises with glues and adhesives
    - (a) mixing procedures for applicable types
        - (i) consistencies
        - (ii) time limits for usage
    - (b) application methods
        - (i) brushes, rollers, paddles, etc.
    - (c) clamping systems and lay-up
        - (i) demonstrations of achieved strengths
    - (d) maintaining gluing equipment
        - (i) cleaning solutions and solvents
    - (e) removal of excess glue following lay-up period

2. Nails, screws and other fasteners
    - (a) selection and spacing of nails for various tasks
        - (i) predrilling, setting
        - (ii) toe nailing
    - (b) selection and spacing of screws
        - (i) selection of proper screwdrivers
            - — Robertson, Phillips, plain
            - — offset, spiral, ratchet
            - — screwguns, etc.

    - (c) boring and drilling
        - (i) countersinks
        - (ii) counterbores
        - (iii) plug cutters
    - (d) selection and spacing of staples and pins for various materials and tasks
        - (i) hand operated stapling tool
        - (ii) pneumatic equipment
    - (e) selection and installation of repair plates
        - (i) mending, corner and T-types

C. Machines and Equipment — 40 Hours

1. Set-up procedures and safe use of powered machines listed in first period theory. Occupational Health and Safety Regulations will be observed.
    - (a) extensions and accessories
        - (i) development and use of simple jigs
            - — taper cutting, wedges
            - — temporary fences, stops, etc.
    - (b) selected exercises that incorporate
        - (i) scope of use with the various machines
        - (ii) practice with solid woods and manufactured materials
            - — working with bowed, warped materials
    - (c) identification of flaws in materials related to
        - (i) improper settings
        - (ii) dull edges
        - (iii) poor alignments
            - — skips, snipes, raised grains, burns, etc.
    - (d) corrective procedures required

2. Basic maintenance procedures
    - (a) cable connections, belt conditions and tensions
    - (b) lubrication, cleaning
    - (c) "touch-up" honing or sharpening

D. Fabrication and Assembly — 35 Hours

1. Selected projects that require
    - (a) interpretation of simple drawings
    - (b) solid woods and plywoods
    - (c) the use of powered and hand tools
    - (d) a variety of basic woodworking joints
        - (i) typical assembly procedures
            - — clamps, lay-up, etc.
        - (ii) clean-up
            - — acceptable for a paint finish
    - (e) assorted fasteners and glues

E. Explosive Actuated Tools Course 6 Hours

1. Objectives — this course is designed to provide
   - (a) instruction in safety
   - (b) instruction in uses and applications
   - (c) instruction in care, maintenance and operation
   - (d) practical experience in firing

2. Theory
   - (a) types of tools, fasteners, charges. High velocity and low velocity tools. How tools operate and why. Safety features in design of tools. The different type of fasteners and charges. Safety codes and regulations. Causes of misfire.
   - (b) application — operator's responsibility. Direction from superiors a part of safe operation. Relationship between pins, charges and materials. Hidden features of fastening surfaces.

3. Practical
   - (a) servicing and storage of tools and supplies. Demonstration of minimum service of all common tools. Major service responsibility of supplier. Proper and safe storage of tools and charges. Disposal of misfired charges.
   - (b) operation (demonstration). Demonstration of the actual firing of a high velocity tool and a low velocity tool
   - (c) operation (participation)
     - (i) prefiring routine:
       - — check proper personal protection
       - — check work surface — visible and invisible
       - — check loading of the tool
       - — check surroundings — "Is it safe tc fire"?
     - (ii) firing — each student to load and fire
       - — high velocity type
       - — low velocity explosive actuated type

4. Test — as designed by the training institute teaching the course.

5. A certificate of Proficiency will be issued on successful completion of the course.

SECTION THREE: SHOP DRAWING 32 Hours

A. Introductions 8 Hours

1. Principles of working drawings
   - (a) orthographic projections
     - (i) plan
     - (ii) elevation
     - (iii) section

2. Language of drawings
   - (a) object, extension, dimension, centre, hidden and break lines

3. Practice with drawing instruments
    - (a) lines
    - (b) numbering and upper case lettering

B. Freehand Sketching — 4 Hours

1. Simple drawings using material symbols for cross sections.
2. Basic drawings as an aid in understanding glossaries.

C. Drawing to Specifications — 10 Hours

1. Basic orthographic and isometric presentations
2. Plan and elevation views for shop projects

D. Blueprint Interpretation — 10 Hours

1. Study of shop drawings for residential and light commercial plans for appreciation of typical presentations.

SECTION FOUR: TRADE MATHEMATICS — 24 Hours

A. Placement Test

Objectives:

This section of training is intended to permit the apprentice to partake in remedial or accelerated exercises at the discretion of the instructors.

B. Calculations Related to Trade Practices

1. Basic Operations
    - (a) whole numbers, fractions and decimals
    - (b) percentage
2. Basic Units and derived units of S.I. (systems international)
3. Linear measurements
    - (a) square, rectangular, triangles and circular shapes
    - (b) irregular (geometric)shapes
4. Area
    - (a) square, rectangular and circular shapes
    - (b) irregular (geometric)shapes
5. Volumes — capacities
    - (a) compartments, bins, excavations, forms, etc.
6. Proportions — percentages
    - (a) fasteners and glue for area
    - (b) loss related to shrinkage and waste allowance, etc.

C. Assigned Problem Solving

1. Cutting sizes
    - (a) quantities related to breakout
    - (b) components related to sheet sizes
2. Development of basic cutting lists

D. Basic Geometry

1. Lines, angles and their relations
2. Pythagorean theorem
    - (a) principles
    - (b) applications in industry

SECOND PERIOD TECHNICAL TRAINING

SECTION ONE: THEORY 56 Hours

A. Registration and Review 6 Hours

1. Registration
   - (a) program orientation
   - (b) reference materials and supplies
2. Selective review of first period training

B. Machines and Equipment 20 Hours

A comprehensive overview of shop type machines used in industry with emphasis on safe procedures and general maintenance of equipment. Principles of machining, cutting angles, cutting speeds, feed speeds, chip thickness, surface quality, etc.

1. Profiling machines
   - (a) scope of operations with various machines
     - (i) cutter heads, cutters and speed settings
     - (ii) cutting and shaping for lathe work
   - (b) jigs and templates for various operations
   - (c) overhead routers
   - (d) shapers
   - (e) lathe
2. Sanders
   - (a) scope of operations with all types of sanders
     - (i) working with large and small components
     - (ii) preliminary and finishing operations
   - (b) replacement procedures for worn belts and disks
   - (c) spindle
   - (d) belt types
     - (i) stroke
     - (ii) edge
     - (iii) wide belt
   - (e) disk
   - (f) oscillating
3. Special purpose machines
   - (a) set-up and operating procedures
   - (b) scope of use in industry
   - (c) mortiser
   - (d) tenoner
   - (e) multi-spindle boring machine
4. Review of industrial equipment used in larger mills and production shops
   - (a) saws
     - (i) straight-line
     - (ii) multi-rip

        - (iii) cut-off
            - — scope of operations and typical usage
        - (iv) panel saw
            - — horizontal
            - — vertical
    - (b) gluing equipment
        - (i) applicators
        - (ii) spreaders
        - (iii) edge applicators and trimmers
        - (iv) spray equipment
        - (v) electronic gluers
            - — scope of operations and typical usage
    - (c) presses and power clamping devices
        - (i) hot and cold plate
            - — loading procedures
            - — pressure settings
            - — lay-up periods for various glues
    - (d) power feed systems
        - (i) applications in industry

C. Laminating Procedures **5 Hours**

1. Plastic laminates
    - (a) review of grades
        - (i) scope of use in industry
            - — standard, postforming, vertical
            - — flame retardant and backer sheets
    - (b) bonding to various surfaces and cores
        - (i) metals, plywoods, particle boards, etc.
            - — selection of glues or adhesives
            - — clamp, press and contact systems
        - (ii) sizing and cutting procedures
            - — scoring awls, powered tools
        - (iii) sequence for application on edges and surfaces
            - — bending on curved, irregular shapes
            - — heat applications for standard grade
        - (iv) trimming procedures
            - — hand and powered tools
            - — cleaning edges and surfaces
    - (c) introduction to postforming procedures
        - (i) heating for short radii

2. Wood laminating
    - (a) selection of materials for various projects
        - (i) solid wood and plywoods
            - — sizes, moisture content, densities
            - — grain patterns, colors, etc.
        - (ii) selection of glues related to usage of units
            - — damp or dry conditions, freeze-thaw conditions
            - — problems related to splitting of solid panels

- (b) gluing, assembling and clamping systems
  - (i) growth rings, grain directions, etc.
  - (ii) special milling of components
    - — curved or irregular contours and shapes
  - (iii) clamping and lay-up systems
    - — clamps, jigs and wedges
    - — length of lay-up times related to glues and temperatures
- (c) sizing and dressing of glued-up units
- (d) introduction to (dry) bending of solid woods and plywoods
  - (i) relative to material, grains and radii
    - — kerf cuts

D. Hardware — 6 Hours

Review of hardware types and style commonly used in industry

1. Cabinet hardware
   - (a) hinge types
     - (i) butt, surface mounted, semi-concealed, concealed, pin, piano
     - (ii) advantages and disadvantages relative to style, strength, ease of installation
     - (iii) jigs and templates used for locations and installations
   - (b) handles, pulls, knobs
     - (i) types
     - (ii) typical locations for style and balance
     - (iii) jigs and templates used for locations and installations
   - (c) catches, locks and latches
     - (i) friction, touch, magnetic and roll point catches
     - (ii) drawer locks
     - (iii) surface mounted latch sets
     - (iv) typical usage, locations and installation procedures
   - (d) sliding hardware
     - (i) tracks and sheaves for by-passing doors and panels
     - (ii) drawer slides and guides
       - — shop made and manufactured types
     - (iii) typical usage, locations and installation procedures
   - (e) shelf hardware
     - (i) standards, pins, brackets
     - (ii) typical spacings and installation procedures
     - (iii) edgings
       - — shop made and manufactured plastic or wood
   - (f) special purpose hardware
     - (i) tray lifts
     - (ii) turning shelves
     - (iii) sliding towel bars and racks
     - (iv) lid supports, double action hinges
     - (v) typical usage, locations and installation procedures

2. Hardware for entrance, passage, folding and sliding doors
   - (a) jigs and templates used for locations and installations in shop fabricating procedures
   - (b) typical hinges, locksets, tracks and hangers, closers
   - (c) recessed cups or pulls

E. Machining and Assembly Practices — 12 Hours

1. Material breakout
    - (a) selection of sheet and dimensioned stock
        - (i) minimal waste in cutting operations
        - (ii) minimal damage to edges and surfaces in handling
            - — protective procedures
    - (b) selection of the most practical machines available for cutting, surfacing and other preparation tasks

2. Casework
    - (a) sequence of preparations and operations
        - (i) fabricating to specifications
            - — fidelity to plans, notes, layout
        - (ii) fabricating with options
            - — considerations for shelf spacing, spans and supports
            - — joints, glues, clamping systems
            - — development of layout rods, full scale layouts, etc.
        - (iii) consideration for fabricating knock-down units
            - — fabricating large units by sections

3. Prefabricated passage door units
    - (a) procedures for exterior types
        - (i) direction of swing, door clearances
        - (ii) cutting widths and length, rabbets
            - — sills, jambs, exterior trim, seals
        - (iii) incorporating side lights, panels
    - (b) procedures for interior door jamb units
        - (i) jambs rabbetted and with door stops
            - — direction of swing, door clearances
            - — cutting lengths and widths
            - — considerations for bypass and folding door frames
    - (c) door installations
        - (i) preparing prehung units for shipment

4. Advanced woodworking joints used in industry
    - (a) variations or adjustments for various tasks
        - (i) slots and spines
        - (ii) dovetails
        - (iii) multi-dowel
        - (iv) mortise and tenon
        - (v) specialized joints
    - (b) practical considerations
        - (i) loads and stresses anticipated on units or fixtures
            - — compression, tension, shearing, impact, etc.
        - (ii) suitability of various joints
    - (c) machines and equipment
        - (i) adaptability of various machines for joint development
        - (ii) use of jigs, templates, stops, guides, fences
    - (d) clamping and securing systems

F. Woodfinishing 7 Hours

1. Introduction to products and procedures for various finishes
   - (a) a review of various procedures with hand and spray equipment
     - (i) preparation of surfaces
       - — repairing minor flaws
   - (b) bleaching
   - (c) staining
   - (d) stopping
   - (e) filling
   - (f) sealing
   - (g) finishing
     - (i) lacquer, varnish, urethane, etc.
   - (h) oil finishes
2. Variations in procedures for desired finishes
   - (a) light or dark tones
     - (i) type of grain, high or low gloss
     - (ii) durability and wear considerations
   - (b) care and maintenance of equipment
     - (i) brushes, rollers, wiping rags
     - (ii) spray guns
       - — airless
       - — pressure fed
       - — hot spray
       - — electrostatic
3. Safety
   - (a) a review of fume and fire hazards
     - (i) breathing apparatus
     - (ii) ventilation factors
     - (iii) protective clothing (bleaching)
     - (iv) storage products
       - — disposal of used rags

SECTION TWO: SHOP 120 Hours

A. Machines and Equipment 50 Hours

1. The set-up and safe usage of additional available machines and equipment listed in second period theory. Occupational Health and Safety Regulations will be observed.
   - (a) selected exercises with available machines and equipment for experience in flexibility of usage of various types
     - (i) material break-out, mortise and tenon work
       - — sanding procedures
       - — profiling, flute groove work, wood turning work
       - — dovetailing, dowel work, etc.
   - (b) clamp and press work
     - (i) hot and cold press work applicable to plastic laminates

2. Joints and moldings
    - (a) selected exercises for development of advanced joints listed in second period theory
        - (i) development using a variety of machines and tools
            - — jigs, templates, stops, etc.
        - (ii) gluing and assembly procedures
            - — tests for strengths of finished joints
        - (iii) sanding, clean-up of nonparallel grains

B. Machining and Assembly Practices **60 Hours**

1. Selected projects or exercises
    - (a) exterior and interior passage door units
        - (i) cutting, rabbeting, assembling
            - — application of trim
            - — installation of door
            - — bypass door frame units
    - (b) open casework in various concepts
        - (i) edge treatments
            - — panels and shelves
        - (ii) shelf supports
            - — surface mounted and recessed
            - — pins, brackets, dados, etc.
        - (iii) units or projects suitable for transparent finish systems
    - (c) casework with drawers and doors
        - (i) layouts to specifications
            - — development of layout rods
        - (ii) specified features
            - — turning shelves, racks
            - — special purpose compartments, drawers
        - (iii) development of face frames
            - — typical sizes of rails and stiles
            - — various joints and assembly systems
        - (iv) drawer development and installations
            - — lip and flush types
            - — various joints and assembly systems
            - — shop-made runners and slide systems
            - — manufactured drawer slide systems
        - (v) development and installation of doors
            - — lip, flush and sliding panel types
            - — edge treatments, applicable hardware
        - (vi) units or projects suitable for transparent finish systems
    - (d) laminating solid woods
        - (i) specified exercises for glued-up units
        - (ii) material, grain, glue selections
            - — minimizing cupping and warpage
            - — machining, sizing considerations

- (e) bending
  - (i) specified exercises for bending unsoaked wood
    - — relative to larger radii
    - — kerf cuts for smaller radii
  - (ii) bending of laminated plastics
    - — relative to larger radii
    - — heat applications for smaller radii

C. Wood Finishing — 10 Hours

1. Selected exercises in procedures
   - (a) inspection of surfaces on units
     - (i) minor repairs or "touch-ups"
       - — stain removals, etc.
   - (b) preparation and maintenance of equipment
     - (i) selection of appropriate tools
       - — sprays, brushes, rollers, etc.
   - (c) application of products
     - (i) relative to specifications
       - — relative to porosity and grain of woods
       - — acceptable rates of flow, etc.
     - (ii) alternative sequences in application of some products
       - — stains, fillers
     - (iii) finished surfaces to specified shades and sheens

2. Minor repairs to finished surfaces
   - (a) mars, rub marks, etc. that can occur in handling

SECTION THREE: SHOP DRAWINGS — 40 Hours

A. Study of Drawings — 20 Hours

1. Typical production units
   - (a) cabinets, open casework, furniture, etc.
   - (b) plan and elevation views
     - (i) sections and details
   - (c) exploded views

2. Blueprint interpretation
   Study of blueprints for appreciation of typical presentations
   - (a) plan, elevation and section views
   - (b) room finish schedules

3. Relating specifications to drawings
   - (a) interpretation of codes
     - (i) kitchen cabinets, doors, etc.
   - (b) relating accepted industry standards to drawings
     - (i) height of counters, desks, tables
     - (ii) cabinet doors to panel sizes, etc.

4. Assigned problem solving related to study of drawings
    - (a) material lists
    - (b) layouts
        - (i) rods, patterns

B. Development of Drawings **20 Hours**

1. Formal and quick freehand sketches
    - (a) details
        - (i) joints
        - (ii) connections
        - (iii) grain directions
2. Drawings for specified shop projects
    - (a) plan and elevation views
        - (i) sections and details

SECTION FOUR: TRADE MATHEMATICS 24 Hours

A. This section of Training is Designed to Permit the Apprentice to Partake in Remedial or Accelerated Exercises at the Discretion of Instructors. Exercises will Relate to the Course Content outlined in blueprint, shop and theory sections.

1. Review of first period
2. Linear
    - (a) dimensions, circumferences
        - (i) regular and geometric shapes
3. Areas
    - (a) surfaces
        - (i) occupied floor space, work space, shelf space
        - (ii) coverage of sheets and panels, etc.
4. Volumes and capacities
    - (a) compartments, drawers, bins for specific quantities or mass
5. Proportions, percentages and ratio
    - (a) waste related to matching colors and patterns
        - (i) minimizing waste in layout and cutting operations
    - (b) loads relative to presses, clamps, etc.
        - (i) quantities relative to areas or units
    - (c) mixing proportions
        - (i) weight
        - (ii) volume

THIRD PERIOD TECHNICAL TRAINING

SECTION ONE: THEORY 56 Hours

A. Registration and Review 6 Hours

1. Registration
   (a) program orientation
   (b) reference materials and supplies

2. Selective review of first and second period training

B. Materials 7 Hours

1. Materials other than wood relative to the Cabinetmaker Trade
   (a) glass
      (i) standard, float, tempered and plate
      (ii) safety glass
         — tempered
         — laminated
         — wired
      (iii) standard thickness
      (iv) mirrors
      (v) typical usage and installations
      (vi) cutting procedures
         — easing, smoothing edges
      (vii) mounting in tracks, doors, etc.
   (b) plastics
      (i) solid (sheet) types
      (ii) typical usage and installations
         — cutting and easing edges
      (iii) mounting in tracks, hinged doors
         — fixed into openings and frames
   (c) manufactured mouldings
      (i) neoprenes, plastics and extruded metal types
      (ii) typical usage and installations
         — tracks, trims, etc.
      (iii) cutting, shaping and securing procedures

2. Insulations and vapour barriers
   (a) theory of heat transfer and loss
      (i) various "R" values relative to thickness
   (b) recognition of forms and types of insulations
      (i) batt, blanket, rigid, loose-fill, foamed-in-place, reflective
      (ii) typical usage
      (iii) installation procedures
   (c) purpose and types of vapour barriers
      (i) usage in industry
      (ii) application methods
         — repair of punctures

3. Materials for sound control systems
    - (a) airborne and transmitted
        - (i) absorption materials
            - — densities and porosities
        - (ii) baffle systems
        - (iii) typical requirements in Cabinetmaking

4. Wood
    - (a) review of solid lumber grading
    - (b) review of veneer grades

C. Packaging and Shipping — 2 Hours

1. Pre-assembly and knock-down systems for site assembly
    - (a) common causes of damage to units in transit or in storage
        - (i) improper handling, adverse moisture conditions
        - (ii) discolorations and stains
            - — mortar droppings, sunlight, etc.
    - (b) preparing various shipments from the shop
        - (i) identification — coding
        - (ii) bulk (size) and mass considerations
        - (iii) packing and protective coverings
        - (iv) tieing or banding considerations

D. Principles of Design and Layouts with Emphasis on Machining and Assembly Practices — 23 Hours

1. Relating to definitions
    - (a) harmony, rhythm, proportion, balance and emphasis
        - (i) contemporary, Colonial and Provincial concepts
    - (b) relating to the color wheel
    - (c) relating to the human anatomy and fixtures
        - (i) accepted industry practices in heights and widths
            - — service and work counters
            - — tables, desks, vanities, chairs and benches
            - — knee and toe spaces, etc.
        - (ii) relating compartment and door sizes to sheet sizes
        - (iii) step saving and accessibility considerations
            - — work areas, light or heavy usage, etc.

2. Study and assignments related to procedures
    - (a) casework
        - (i) provincial, contemporary, Colonial concepts
            - — base types
            - — solid, panelled, sliding and tambour type doors
            - — contoured, sloped and special purpose drawers
            - — applicable hardware
    - (b) panel work
        - (i) walls, screens, dividers, facades, etc.
            - — considerations for mounting or securing on-sites

        - (ii) special doors and window units
            - — veneering
            - — frames, transoms
        - (iii) arched and other special components
    - (c) suspended ceilings
        - (i) joints, connections
            - — grains, colors

3. A study and review of procedures used for a variety of customized cabinets, furniture units and other fixtures.
    - (a) relating to specifications and drawings
    - (b) relating to practices in industry
        - (i) sequences
            - — layouts, cutting lists
            - — breakout of materials
            - — machining and assembling
        - (ii) adjustments neccessitated by various practices and available equipment in large industrial plants or smaller shops

E. Machinery and Equipment **14 Hours**

1. Advanced set-up and machining methods with solid woods, plywoods and manufactured boards
    - (a) shapers
        - (i) jigs and patterns to cope with geometric and irregular shapes
            - — profiling, making tenons, flute work
            - — making shapes with forms, etc.
    - (b) mortisers and tenoners
        - (i) accommodating curved and other irregular components
    - (c) multiple-spindle boring machines
        - (i) set-up procedures
            - — positioning bits, establishing depths, etc.
    - (d) dovetailers
        - (i) set-up for various applications
            - — drawers, joint connections
    - (e) routers
        - (i) hand and overhead
            - — jigs, templates and patterns
            - — profiling, flute work
            - — internal routing, recesses for inlays
            - — decorative surface work, etc.
    - (f) presses
        - (i) hot and cold systems
            - — relating lay-up times to temperature and glue types
            - — relating pressure settings to core density
            - — procedures for small and larger components

2. Other industrial equipment
    - (a) general information and discussion on equipment normally used in large production plants
        - (i) veneer splicers, clippers, guillotines
        - (ii) glue spreaders
        - (iii) wood bending tanks, laminating presses and forms

F. Stairs — 4 Hours

1. Introduction to stairs
   - (a) applicable codes
   - (b) layout of stringers
     - (i) notched, built-up
     - (ii) provisions for finished floors
     - (iii) anchoring at landings

2. Housed and mitred stringers
   - (a) layouts for rise and run
     - (i) templates for routing
   - (b) balustrades
     - (i) handrails, balusters, newel posts
   - (c) cutting and assembly procedures
     - (i) connections, joints and easements
     - (ii) preassembled or component packages

SECTION TWO: SHOP — 120 Hours

Objectives:

Shop operations will relate to items outlined in theory sections. Safety regulations will be observed.

A. Materials — 4 Hours

1. Selected assignments or demonstrations with materials listed in third period theory.
   - (a) glass
     - (i) cutting, shaping
       - — easing edges
     - (ii) installation procedures
       - — clips, stops, grips, handles
       - — compounds for embedment and seals
   - (b) solid plastics
     - (i) cutting, shaping
       - — easing edges
     - (ii) installations
   - (c) manufactured mouldings and trim
     - (i) cutting, shaping
     - (ii) installations
       - — nails, screws, adhesives

2. Demonstrations and exercises with materials used in temperature and sound control systems
   - (a) insulations and vapour barriers
   - (b) acoustic materials
     - (i) cutting and installation procedures

B. Machinery and Equipment — 40 Hours

1. Selected projects or exercises that incorporate advanced set-up and use of machines and equipment.
    - (a) shapers
    - (b) mortisers
    - (c) tenoners
    - (d) dovetailers
    - (e) routers
        - (i) hand
        - (ii) overhead
    - (f) presswork
        - (i) veneering

C. Layout, Machine and Assembly Practice — 76 Hours

1. Selected projects to specifications and drawings that encompass a broad scope of practice. Tasks may be specified as individual, pair or group assignments at the discretion of instructors
    - (a) stairwork
        - (i) — layouts to specifications
          — acceptable codes
        - (ii) development and assembly of a straight flight stair
            - — notched built-up
            - — housed and/or mitred stringers
            - — balustrade
    - (b) casework units
        - (i) Provincial, contemporary and Colonial concepts
    - (c) panel work
        - (i) selection and sizing of cores
        - (ii) wood veneer applications
            - — various matchings
        - (iii) frame-and-panel units
    - (d) architectural components and units
        - (i) geometric shapes
            - — arched items with various spans and rise
            - — wood bending
            - — laminating

SECTION THREE: SHOP DRAWING — 40 Hours

A. Blueprints for a Commercial Type Building — 15 Hours

1. An introductory study of typical working drawings
    - (a) architectural
    - (b) structural
    - (c) mechanical
    - (d) electrical

2. Isolating the Cabinetmakers work
    (a) plan views
        (i) partition layout
            — room size, door and window location
            — location of cabinets and other units
    (b) interior elevation views
        (i) cabinets and fixtures
            — sections and details
        (ii) cross reference with specifications
    (c) room finish schedules

3. Relating to other trades
    (a) general awareness of preparatory and finish work by other trades
        (i) landings for stair units
        (ii) backing provisions within partitions and walls
        (iii) interior finish on floors and walls
            — room finish schedules
            — door schedules

B. Drawings — 25 Hours

1. Developing working drawings and layouts
    (a) geometric shapes of components and units
        (i) irregular
        (ii) elliptical
        (iii) curved
        (iv) multi-sided
        (v) auxiliary views
    (b) practice with design principles and concepts
        (i) elevations of various units and fixtures
            — balance and proportion
        (ii) location of cabinet and fixtures in rooms
            — work or service areas
            — step saving — convenience
        (iii) development of complex angles
            — hoppers

2. Assigned problem solving arising from study of commercial blueprints
    (a) quick freehand sketches
    (b) working drawings
        (i) sections and details

3. Drawings for shop practice projects

SECTION FOUR: TRADE MATHEMATICS — 24 Hours

A. Assignments Will Relate to Course Content Outlined in Theory, Shop And Shop Drawing Sections

1. Problem solving related to study of blueprints and drawings
    (a) rooms, locations
        (i) dimensions
        (ii) areas

- (b) cabinets and fixtures
    - (i) capacities and volumes, areas, spacings
    - (ii) material quantities
        - — cutting lists

2. Stairs
    - (a) calculations relative to layouts
        - (i) rise and run
            - — headroom
        - (ii) material quantities

3. Other layouts
    - (a) geometric shapes
    - (b) patterns and rods
        - (i) applicable calculations

4. General
    - (a) ratio and proportion
        - (i) quantities and areas
            - — glues for surfaces
            - — shut-down or set-up periods relative to operations
            - — hours relative to single unit or production in quantity, etc.

5. Introduction to costing
    - (a) labour factors
    - (b) overhead costs
    - (c) maximum usage in material break-out

FOURTH PERIOD TECHNICAL TRAINING

SECTION ONE: THEORY 56 Hours

A. Registration and Review 6 Hours

1. Registration
   (a) program orientation
   (b) reference materials and supplies

2. Selective review of technical training delivered in previous periods

B. Related Trade and Industry Practices 9 Hours

1. Roles and responsibilities within the construction industry
   (a) Federal, Provincial and Municipal authorities
      (i) research, regulations and codes, zoning, permits, etc.
   (b) role of architects and engineers
      (i) design, specifications, inspections, etc.
   (c) role of general and sub-contractors
      (i) role of Cabinetmakers
      (ii) appropriate communications in shop and on sites
         — clarification of details and procedures with supervisors
         — customer relationships
   (d) other trades
      (i) obligations to trade that follow-up on Cabinetmakers' work
         — wood finishing specialists
         — on-site assemblers and installers, floor layers, etc.

2. Review of accident prevention procedures
   (a) Occupational Health and Safety Regulations
   (b) structure of safety committees
   (c) industrial health hazards
      (i) fumes, skin contact with toxic materials
      (ii) noise, etc.

3. Introductory study of estimating and costing of projects
   (a) structure of companies
   (b) contracts
      (i) general
      (ii) construction
   (c) Alberta Bid Depository
   (d) labour costs
   (e) material costs
   (f) overhead costs

C. Industry Practices 30 Hours

1. A review of set-up, machining and assembly procedures typically encountered in todays industry
   (a) churches
   (b) lobbies, lounges

    - (c) food service fixtures
    - (d) custom furniture units

2. A review of special requirements
    - (a) curved and irregular components
        - (i) cutting, routing and shaping with patterns
        - (ii) applicable jigs and templates
    - (b) wood veneer work
        - (i) grain selection for various matchings
        - (ii) cutting, trimming and assembling procedures
            - — hot and cold glue systems
    - (c) inlay work
        - (i) recesses and fillers

3. An introduction to basic wood carving
    - (a) hand tools available
    - (b) approximate shaping with powered equipment
        - (i) possible applications in industry
            - — cabriole legs, patterns and molds, models, etc.

4. Fire retardant materials
    - (a) a review of fire and flame-spread ratings of various materials associated with the Cabinetmaker Trade
        - (i) fire retardant treatments for wood
        - (ii) fire rated doors
        - (iii) fire rated finishes

5. Advanced stairwork
    - (a) circular stairs
        - (i) layout procedures
        - (ii) laminating — bending of stringers or carriage
        - (iii) hand rail or balustrade considerations

6. General equipment maintenance
    - (a) review of nominal procedures
        - (i) lubrications, belt tensions, power connections, etc.
        - (ii) minimizing major repairs through regular checks
            - — recognition of stress on equipment through unusual noises and vibrations, belt wear, loose bolts, etc.
    - (b) reconditioning cutters and knives
        - (i) balancing cutter heads
        - (ii) procedures for making or altering shapes of cutters

7. Industry visitations
    - (a) where feasible, observations of procedures with special equipment normally associated with large production plants

D. Installation Procedures **2 Hours**

1. A review of procedures typically used for on-site installations
    - (a) accepted heights and spacings of wall mounted units

- (b) locating studs or backing in framed walls
    - (i) securing methods
        - — adhesives, screws and bolts, hollow and solid wall fasteners
- (c) alignments and adjustments for minor warpages and imperfect walls and floors
    - (i) plumb and level considerations
    - (ii) shimming points
    - (iii) scribing, etc.
- (d) checks for ease of operations following installations
    - (i) doors, drawers, slides, etc.

E. Wood Finishing — 9 Hours

1. A review of products and procedures for typical wood finishing to commercial specifications.
    - (a) bleaching, staining, filling, sealing
        - (i) finish coats
    - (b) oil finishes

2. Introduction to special customized treatments
    - (a) glazing
        - (i) over painted surfaces
        - (ii) over stains and fillers
    - (b) shading
        - (i) antique effects
    - (c) distressing
        - (i) antique effects
    - (d) contrasts
        - (i) variations in color of fillers and wood

SECTION TWO: SHOP — 120 Hours

A. Machining and Assembling — 70 Hours

1. Selected assignments and projects relative to subject matter listed in fourth period theory. Tasks may be specified as individual, pair or group assignments at the discretion of instructors.
    - (a) veneer work
        - (i) panels with various matches
    - (b) inlay work and wood carving
        - (i) practice exercises incorporated with project
    - (c) commercial fixtures and church work
        - (i) irregular, multi-sided shapes
            - — full scale patterns
        - (ii) specified details
            - — bent, shaped, arched components

2. Miscellaneous
    - (a) general maintenance
        - (i) reconditioning cutting edges
        - (ii) shaping cutters

- (b) installation of hollow and solid wall anchors
    - (i) molly and toggle bolts
    - (ii) plastic grips — expansive shields, etc.

B. Wood Finishing 10 Hours

1. Demonstrations and participation in exercises that incorporate subject matter listed in fourth period theory
    - (a) wood finish procedures for typical commercial specifications
    - (b) special customized treatments
        - (i) contrasting
        - (ii) distressed surfaces
        - (iii) shading
        - (iv) glazing

C. Practical Examination 40 Hours

Each apprentice will be required to build to specifications an in-class project. The project will be assessed by representatives from industry and marks awarded will be a major consideration in awarding Completion of Apprenticeship and Journeyman status.

SECTION THREE: SHOP DRAWING 40 Hours

A. A Comprehensive Review of Blueprints and Drawings That are Typically Encountered in the Cabinetmaker Trade 15 Hours

1. Specifications and blueprints for a commercial building
    - (a) determinations of ambiguous or arbitrary items within plans and specifications
    - (b) isolating the Cabinetmakers work
        - (i) study of various designs and specification for walls, ceiling, columns
            - — plan, elevation, section and exploded presentations
            - — reflected plan views of ceilings
        - (ii) establishing sequences for fabrication in shop
            - — storing or consigning units to job site
        - (iii) considerations for delivery
            - — size of units relative to door or access openings, skips, elevators or stairs
    - (c) acceptable procedures of typical and unusual job problems arising from study of plans and in-class discussion.

B. Shop Drawings 25 Hours

1. Depicting details
    - (a) quick freehand sketches for clarifications with supervisor or customer

2. Development layouts
    - (a) full scale patterns

    - (b) templates
    - (c) layout rods

3. Assigned drawings
    - (a) shop projects
        - (i) cutting lists

4. Final project drawing
    - (a) classroom introduction to project
    - (b) project drawing with instructor overview
    - (c) classroom review of completed shop drawing before start-up in shop

SECTION FOUR: TRADE MATHEMATICS 24 Hours

A. Assignments Will Relate To Course Content Outlined in Theory, Shop and Shop Drawing Sections

1. Calculations related to study of blueprints
    - (a) layouts
    - (b) areas, etc.

2. Calculations related to stairs
    - (a) circular layouts
    - (b) cutting lists

3. Mechanical advantages
    - (a) pulleys

4. Costing
    - (a) material breakout
        - (i) economial use of materials
            - — grades
            - — waste factor
    - (b) labour variables relative to
        - (i) details
        - (ii) number of set-ups
        - (iii) quantities
    - (c) handling — shipping

5. Interpretation and development of charts and graphs
    - (a) bars
    - (b) lines

SUGGESTED REFERENCE MATERIALS

Cabinetmaker and Millwork — J. L. Feirer — Bennett (Revised)

Student Guide (Keyed to the textbook by Feirer)

Stanley Tool Guide — Stanley Tool Company

Orthographic Projection Simplified — C. Quinlan — McKnight and McKnight — 2nd Edition

Encyclopedia of Furniture Making — E. Joyce — Drake

Understanding Wood — Bruce Hoadley

TECHNICAL TRAINING SCHOOLS

The Cabinetmaker Trade apprenticeship training program is offered by Alberta Manpower, Apprenticeship and Trade Certification. Staff and facilities for teaching the program are supplied by:

1. Northern Alberta Institute of Technology
2. Southern Alberta Institute of Technology

LOCATION OF APPRENTICESHIP AND TRADE CERTIFICATION REGIONAL OFFICES

BONNYVILLE

CALGARY

EDMONTON

FORT MCMURRAY

GRANDE PRAIRIE

HINTON

LETHBRIDGE

MEDICINE HAT

PEACE RIVER

RED DEER

VERMILION

ALBERTA REGULATION 92/80

THE MANPOWER DEVELOPMENT ACT

CABINETMAKER TRADE REGULATION

1(1) In this regulation

(a) "cabinetmaker" means a person who

(i) sets up and operates woodworking machines and equipment,

(ii) makes layouts and patterns, and

(iii) cuts, shapes, moulds and assembles components of wood and wood substitutes in accordance with varying specifications;

(b) "production cabinetmaker" means a person engaged in the preparation and assembly of components of wood and wood substitutes for units produced in quantity and of similar specifications;

(c) "General Regulations" means the General Regulations under *The Manpower Development Act,* (Alta. Reg. 43/77) as amended;

(d) "trade" means the trade of cabinetmaker.

(2) The definitions in the General Regulations apply in this regulation.

AR 92/80

PART 1

APPRENTICESHIP AND TRADE TRAINING

2 A person is eligible to be an apprentice who has

(a) satisfied the requirements of section 5 of the General Regulations, and

(b) completed grade 9 in school or the equivalent, or passed an entrance examination prescribed by the Board.

AR 92/80

3(1) Subject to this section, an employer who is a journeyman or employs a journeyman may employ one apprentice, and one additional apprentice for each additional journeyman he employs.

(1.1) If the supply of journeymen in a location where an employer is carrying on business is insufficient to permit the employer to carry out his commitments, the Director may authorize the employer to employ apprentices in addition to those permitted under subsection (1).

(2) The Director may authorize an employer to employ an apprentice, in addition to those permitted under subsections (1) and (1.1), to train him in a branch of the trade not engaged in by the employer to whom he is apprenticed.

(3) An apprentice employed temporarily under subsection (2) shall not, for the purposes of subsections (1) and (1.1), be considered to be an apprentice of his temporary employer.

AR 92/80; 70/85

4(1) The term of apprenticeship for a cabinetmaker shall consist of 4 periods of 12 months each.

(2) The term of apprenticeship for a production cabinetmaker shall consist of 2 periods of 12 months each.

(3) Each period referred to in subsections (1) and (2) shall consist of not less than 1600 hours of employment, inclusive of time spent attending technical courses prescribed by the Board.

(4) Repealed AR 70/85.

AR 92/80; 70/85

5 When a contract of apprenticeship is registered with the Director, he shall issue to the apprentice an official record book referred to in section 14 of the General Regulations.

AR 92/80

6(1) An apprentice shall not advance to the next period until the Director has authorized him to do so by making an entry in the apprentice's official record book under subsection (2).

(2) The Director shall make an entry in the apprentice's official record book authorizing advancement to the next period when the apprentice

(a) has completed the previous period of apprenticeship,

(b) has received, in the opinion of the Director, a satisfactory report from

(i) his employer, and

(ii) the school at which he attended technical training courses prescribed by the Board,

(c) has completed the tests and examinations prescribed by the Board, and

(d) has attained pass marks prescribed by the Board in the tests and examinations referred to in clause (c).

AR 92/80

7 The official record book of an apprentice shall be kept in the possession of his employer and, upon termination of employment of the apprentice, the employer shall present the book to him.

AR 92/80

8(1) An apprentice may, with approval of the Director, transfer

(a) from a cabinetmaker apprenticeship to a production cabinetmaker apprenticeship, or

(b) from a production cabinetmaker apprenticeship to a cabinetmaker apprenticeship.

(2) If an apprentice transfers his apprenticeship under subsection (1)(b), no certificate shall be issued until the requirements of the cabinetmaker apprenticeship have been met.

AR 92/80

9(1) The employer shall pay wages to an apprentice cabinetmaker that are not less than the following percentages of the prevailing wages paid to a journeyman cabinetmaker:

(a) 55% in the first period;

(b) 65% in the second period;

(c) 75% in the third period;

(d) 85% in the 4th period.

(2) The employer shall pay wages to an apprentice production cabinetmaker that are not less than the following percentages of the prevailing wages paid to a journeyman production cabinetmaker:

(a) 65% in the first period;

(b) 75% in the second period.

(3) Notwithstanding subsections (1) and (2), the wages paid to an apprentice shall not be less than the minimum wage fixed pursuant to the *Employment Standards Act.*

(4) An employer is not required to pay wages to an apprentice during the time that the apprentice spends attending technical training courses prescribed by the Board.

AR 92/80; 70/85

10 The hours of work and working conditions of an apprentice shall be the same as those of a journeyman.

AR 92/80

PART 2

CERTIFICATION

11 The Director may issue Certificates of Qualification in the following classes:

(a) cabinetmaker;

(b) production cabinetmaker.

AR 92/80

12 In addition to section 32 of the General Regulations, the Director may issue a Certificate of Qualification without examination to a person who holds

(a) a Certificate of Completion of Apprenticeship for the appropriate class of the trade issued by another province within Canada, or

(b) a Certificate of Qualification or a Certificate of Proficiency for the appropriate class of the trade, issued by another province within Canada, bearing an Interprovincial Standards Red Seal.

AR 92/80

13(1) In accordance with section 32(b) of the General Regulations, the Director may issue a Certificate of Qualification to a person who successfully completes an examination referred to in this section.

(1.1) An application to take an examination for a Certificate of Qualification shall be made to the Director.

(2) Documentary evidence acceptable to the Director shall be presented by an applicant for an examination showing that the applicant

(a) holds a certificate equivalent to an Alberta Certificate of Qualification for the appropriate class of the trade issued by another provincial authority within Canada,

(b) in the case of a cabinetmaker, has acceptable work experience in accordance with Schedule A, or

(c) in the case of a production cabinetmaker, has acceptable work experience in accordance with Schedule B.

(3) The applicant shall provide translations into the English language, acceptable to the Director, of credentials other than in English submitted pursuant to subsection (2).

AR 92/80; 70/85

14 Certificates of Qualification issued under this regulation are effective unless cancelled or suspended by the Director in accordance with sections 42 and 43 of the General Regulations.

AR 92/80

15 *Alberta Regulation 255/75 is repealed.*

AR 92/80

SCHEDULE A

1 To be eligible to take an examination leading to certification as a journeyman cabinetmaker, an applicant shall provide to the satisfaction of the Director, evidence of not less than 5 years of experience in the trade of cabinetmaker, including

(a) experience with set up and safe use of general purpose woodworking machines and special purpose woodworking machines listing the specific types of machines involved;

(b) experience with interpretation of plans, drawings and cutting lists, and

(c) experience in one or more of the following work areas:

(i) architectural fixture work that may include

(A) stair work and balustrades;

(B) special design doors and windows;

(C) custom dining rooms, lounges, lobbies;

(D) other similar work;

(ii) custom millwork that may include

(A) carcase units;

(B) kitchen cabinets;

(C) vanities, screens, planters;

(D) shelf units;

(E) other similar work;

(iii) custom furniture work that may include

(A) tables and chairs;

(B) commercial furniture;

(C) institutional furniture;

(D) other similar work.

AR 92/80; 70/85

SCHEDULE B

1 To be eligible to take an examination leading to certification as a journeyman production cabinetmaker, an applicant shall provide to the satisfaction of the Director, evidence of not less than 3 years experience in the production cabinetmaking branch of the trade including

(a) experience with set up and safe use of general purpose woodworking machines listing the specific types of machines involved,

(b) not less than 3 months experience in respect of material preparation and breakout,

(c) not less than 3 months experience in respect of assembling components and hardware installation, and

(d) not less than 3 months experience in

(i) laminating work using wood or plastics, or

(ii) cutting, fitting and installation of prefinished components in factory produced units.

AR 92/80; 70/85

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